

What Is Claimed Is:

1. An amplifier circuit, comprising:  
2 an operational amplifier having a non-converting input  
3 terminal coupled to a ground, a converting input  
4 terminal, and an output terminal; and  
5 a resistor network comprising a plurality of stages  
6 connected serially, coupled between the converting  
7 input terminal and the output terminal, wherein each  
8 stage of the resistor network comprises:

9 an input node;

10 an output node;

11 a first resistor coupled between the input node  
12 and the ground; and

13 a second resistor coupled between the input node  
14 and the output node.

1. The amplifier circuit as claimed in claim 1, wherein  
2 the resistance of the first resistor is two times larger than  
3 the resistance of the second resistor.

1. The amplifier circuit as claimed in claim 2, wherein  
2 the equivalent resistance of the resistor network is  $2^n \times R$ ,  
3 wherein the resistor network includes n stages and the  
4 resistance of the second resistor is R.

1. An amplifier circuit, comprising:  
2 an operational amplifier having a non-converting input  
3 terminal coupled to a ground, a converting input  
4 terminal, and an output terminal;

5       a first resistor network comprising a plurality of stages  
6       connected serially, coupled to the converting input  
7       terminal for receiving an input voltage, wherein each  
8       stage of the first resistor network comprises:  
9               an input node;  
10              an output node;  
11              a first resistor coupled between the input node  
12              and the ground; and  
13              a second resistor coupled between the input node  
14              and the output node; and  
15              a loading unit coupled between the converting input  
16              terminal and the output terminal.

1       5. The amplifier circuit as claimed in claim 4, wherein  
2       the resistance of the first resistor is two times larger than  
3       the resistance of the second resistor.

1       6. The amplifier circuit as claimed in claim 5, wherein  
2       the equivalent resistance of the resistor network is  $2^n \times R$ ,  
3       wherein the resistor network includes n stages and the  
4       resistance of the second resistor is R.

1       7. The amplifier circuit as claimed in claim 4, wherein the  
2       loading unit is a second resistor network comprising a plurality  
3       of stages connected serially, wherein each stage of the first  
4       resistor network comprises an input node, an output node, a third  
5       resistor coupled between the input node and the ground, and a  
6       fourth resistor coupled between the input node and the output  
7       node.

1       8. The amplifier circuit as claimed in claim 7, wherein  
2       the resistance of the third resistor is two times larger than  
3       the resistance of the fourth resistor.

1       9. The amplifier circuit as claimed in claim 8, wherein  
2       the equivalent resistance of the resistor network is  $2^n \times R$ ,  
3       wherein the resistor network includes n stages and the  
4       resistance of the fourth resistor is R.

1       10. A resistor network includes a plurality of stages  
2       connected serially, wherein each stage of the first resistor  
3       network comprises:

4            an input node;  
5            an output node;  
6            a first resistor coupled between the input node and the  
7            ground; and  
8            a second resistor coupled between the input node and the  
9            output node, wherein the resistor network is  
10          implemented inside of an IC device.

1       11. The amplifier circuit as claimed in claim 10, wherein  
2       the resistance of the first resistor is two times larger than  
3       the resistance of the second resistor.

1       12. The amplifier circuit as claimed in claim 11, wherein  
2       the equivalent resistance of the resistor network is  $2^n \times R$ ,  
3       wherein the resistor network includes n stages and the  
4       resistance of the second resistor is R.

5           13. The amplifier circuit as claimed in claim 10, wherein  
6    each of the first resistor and the second resistor is implemented  
7    by a MOS transistor.

1